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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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| 08/689,708      | 08/16/96    | WEIBLER W            | 1120                |

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34M1/1211

EXAMINER  
FLANIGAN, A

ART UNIT  
3407

PAPER NUMBER

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*LM*

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.  
08/689,708

Applicant(s)  
Weibler

Examiner  
Allen J. Flanigan

Group Art Unit  
3407



☐ Responsive to communication(s) filed on \_\_\_\_\_

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-19 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-19 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 3407

Note to the applicant: This action cites two references, one a French patent, the other a U.S. patent. It is suspected (though not certain) that the previous US application referred to in the U.S. patent specification (267,248) corresponds to the French patent. Since the disclosures of these patents are quite similar, and since they are from the same inventor, the Examiner is relying upon the description given in the U.S. patent specification in lieu of a direct translation of the French patent for clarification or explanation of the invention shown in the drawings of the French patent. The applicant may, of course, provide a translation if there is any question as to the appropriateness of the Examiner's reliance upon the text of the U.S. patent specification.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over French patent #1389833 to Rosenblad (hereinafter "Rosenblad '833"), particularly in view of Davison et al.

Rosenblad '833 shows the claimed invention, except that the inlet and outlet couplings are provided on the side pieces 15-18, rather than the end pieces 2, 3 which

Art Unit: 3407

extend the length of (and beyond) the core. In general, relocation of parts (in this case, the inlet and outlet couplings) without any change in function is considered an obvious modification. Moreover, Davison et al. show a similar exchanger construction in which it is specifically disclosed that the inlet and outlet couplings can be located as desired on any of the three pairs of faces of the six-sided core. Thus, it would have been obvious to relocate the couplings 33, 34 of Rosenblad '833 to the corner portions of side plates 2, 3. Regarding the recitations "affixed to one face of said core after said core has been constructed and tested", these recitations concern the intended method of making the claimed device, and will not be given weight as structural limitations, since they add nothing structurally to the claim.

Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenblad '833, particularly in view of Davison et al. as applied to claims 1-5 above, and further in view of Collins and Des Champs.

Ordinarily, a change in shape is deemed an obvious modification. Collins is cited because it expressly shows a construction similar to Rosenblad, with manifold spaces formed at the ends of the stack, but utilizing rectangular plates, instead of the plates of Rosenblad '833 shaped with triangular ends. In view of this, it would have been an obvious modification to utilize rectangular plates in Rosenblad '833, to give a slightly more compact configuration. Further, both Collins and Rosenblad '833 utilize blocking strips between the edges of adjacent plates to block communication between

Art Unit: 3407

alternate plates at the ends thereof (9E in Collins, 35 of Rosenblad '833). Another way of sealing the edges of adjacent plates together is to simply bond the edges to each other, as shown in Davison et al., by bending one towards the other, or as shown in Des Champs, by bending both towards each other. It would have been obvious to one of ordinary skill in the art to seal the appropriate edge portions of the ends of Rosenblad '833's plates to each other in this fashion to simplify assembly (by eliminating the need for separate spacers).

Regarding claim 11, both Davison and Collins teach the formation of dimples directly on the flow separating plates of these types of heat exchangers, thus eliminating the need for separate inserts (and the added weight and cost thereof), and it would have been obvious to do the same in Rosenblad '833.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Hulswitt et al, Davison et al., and Des Champs.

As commented above, the sealing of alternate edge portions of the ends of plates in stacked plate heat exchangers such as shown in Hulswitt et al. by means bending one (or both) towards the other and bonding them together is known as shown by Davison et al. and Des Champs, and to do so for the reasons given previously in the exchanger of Hulswitt et al. would have been obvious. Alternatively, it would have been obvious to one of ordinary skill in the art that the rectangular plate shape taught

Art Unit: 3407

in Hulswitt et al. could be adapted to the Fig. 1 embodiment of Davison et al. by employing the manifold boxes of Hulswitt et al.

Claims 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davison et al. in view of Peze et al.

The method described in the illustrative embodiment of Davison et al. involves utilizing the relatively thick end plates 16, 18 to apply even pressure to the plate stack during welding; thus, these plates are not attached "after said core has been built". Peze disclose a welded, stacked plate heat exchanger in which they teach that the core can be constructed by attaching the thin inner plates together by welding before attaching the reinforcing outer housing plates. It would have been obvious to one of ordinary skill in the art to assemble the plates of Davison et al. in this fashion; this really amounts to no more than a rearranging of the order of the assembly steps. As to the "tested for leaks" recitation, the Examiner hereby takes official notice that testing of manufactured articles in various stages of completion is so notoriously well known in the art that citation of a reference is not deemed necessary (*In re Malcolm*, 54 U.S.P.Q. 235); it would have been obvious to one of ordinary skill in the art to test the exchanger of Davison for leaks if there were any chance that the assembly process would yield products prone to flaws or leaks.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Art Unit: 3407

The citation of the U.S. patent to Rosenblad has been explained above. The remaining references show stacked parallel plate heat exchangers.

Any inquiry regarding this or a previous communication from the Examiner should be directed to **Allen J. Flanigan** at telephone number **(703) 308-1015**. The Examiner can normally be reached Monday through Friday from 9:30AM until 6:00PM. Documents may be faxed to the Examiner's attention at **(703) 308-7765**.

**A. FLANIGAN**

**12/5/97**

  
**ALLEN J. FLANIGAN**  
**PRIMARY EXAMINER**  
**GROUP 340**